An Essay
on
The Physiology of the Heart

Respectfully Submitted
To the Faculty of the
Homeopathic Medical College
of
Pennsylvania
on the
Twenty-seventh day of January
One thousand eight hundred & fifty three

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As the chief executor of our political bodies, presides over the deliberations of the assembled wisdom and controls the destiny of the whole country - holding the reigns with invincibleness and exercising supreme jurisdiction over officers and subordinates - whose duty it is - to avert encroachment upon his vast domains - and lull to silence the frequent insurrections that serve - but to distroy the peace and tranquility of his reposing inmates — So the heart rules over the whole empire of vital organization — and presides over many powers that compose and help to develop the dynasty of our material existence -

This executor has also for the better protection and security of his inland powers - numerous vessels of importation

and exportations - issueing from an inexhaustible reservoir, adequate to home - and foreign demands. Upon the first intimation to him, by a distant part of the necessity of increased supplies - importing vessels are instantly ladew - with the various products of the Kingdom - the communica- -tion is acknowledged - the mission accepted - when they speed their way peacefully and quietly though the numerous and delicate chan- -nels - leading to the coasting cities, joyfully parting at every port all the claims of the surrounding community - until the channels become unnavigable - when they transfer their missions to vessels of exports whereby a new and

foreign fabric. is introduced into the great metropolis of the nation

In like manner. the heart the chief operator of our physical bodies. send forth vessels to the various textures and tissues. and by their numerous ramifications and outlets- supplies the necessa-ry elements in the various appen-dages of the entire organism- to ~~build~~ repair the loss- and build up the waisting tissues-

Should all the powers on earth unite to construct one huge engine. it would not compare in power and. beauty of its parts. with this little engine of motion that propels the complicated machin-ary of our material bodies —

Influenced by the impulses of

volition - and put in motion
by the powers - that move all
animated nature - it fails not
to warn the traveler by the way
"to clear the track" "lub-dub"
"lub dub" - and prompts him
by the reactive powers of its na-
ture. not to stimulate to improp-
spurred by the morbid fires of
excitement - From the earliest
dawn of our existence to the
closing scene of life - whether
wrapped in the dust Embraces
of morpheus - or alive to the din
of industry around us. it un-
=ceasingly rolls the driving wheels
onwards - and like a faithful
Sentinal keeps watch - while his
lord reposes upon the couch
of indulgence —

Controled by the immaterial and
invisible Principles of our nature
and kept in check by the
lever of dynamic Power. it serves
as a "governor" to regulate the ve-
-locity of the complex machanism
of our physical bodies — as a
main Spring to propel the con-
-catenated - cogs - levers - and pistons
distributed - through the most
stops of the human citidal —
As a forcing Pump - to supply
the various aqueducts — with the
waters of life - forcing a perpetual
jet - but mild as when Zephyr moves
the rippling tide. a Sport upon
the frowned brow — Care must
be observed in lubricating this del-
-icate structure — Withhold the oil of
Pen-tagum — and restrain the fingers

of sympathy - if these are lustily applyed - the signal may be expected, the alarm will be sounded - the Emotion communicated from place to place by the telegraphic wires of vital electricity - until the very elements of our nature are aroused - to resist the foe - and evade his contaminating influences — ——

Sometimes foreign or effete matter accumulates within the flues - or about the valves - preventing the egress of steam - if so - the pressure reservoir will indicate it - by distention of its walls - by the vacillating - thrill communicated to adjacent parts - and by the blowing or hissing sounds consequent upon the escaping content —

Do some of these obstructions most

liable to interfere with the exercise of her powers. I propose now to direct your attention — viz Pericarditis. Carditis and Endo-carditis — each of which may occur as an Idiopathic or Symptomatic affection —

But through fear of exhausting your patience I shall pass over the anatomical discription of this organ. and proceed at once to consider in my usual manner the physical signs and symptoms together with the general treatment — without specifying any definite remedy indicated by a particular train of Symptoms —

Inflamation of the Pericardium is clinically known in the Acute-

and Chronic forms —

Acute Pericarditis — for the sake of convenience. may be devided into five distinct anatomical Stages — viz Vascularity with dryness — Plastic Exudation. Effusion — absorbsion. and adhesion — Passing consecutively in a well developed case — from the first to the last Stages.

During the incipient or dry Stage — the visible impulse as communicated to the walls of the chest is greater than natural — the impulse as felt to forcible — partaking more of a beating than a heaving character — and sweepingly varying in Strength. —

Crepitation may be heard in some cases. resembling that heard in Pleurisy —

In the second Stage we frequently though not invariably find bulging of Precardial region - dullness upon Percussion corresponding - in extent to the Exudation - But the most essential physical sign. is the peculiar thrill - similar to that sensation Experienced - by placing the hand on the back of a cat - when it is purring - this with the precardial friction sound - most distinct over the triangular Space. uncovered by the lungs. is the most reliable -

Much comment and Speculation - has been made upon the

latter sign - some attribute it to attrition - others to the separation of surfaces glued together by the exudation matter - others again to the bending of false membranes - all of which appear plausible - especially the first two - For my part I'm disposed to favor the first —
I concein too. that valvular murmer may also be present and which may be said with propriety to result from the pressure of the exuding matter against the origen of the aorta and pulmonary arteries - thereby diminishing their calabre - and interfering with the free expansion and ingress of blood —

In the third Stage. arching of the cardiac region. is readily discovered. and even bulging of the intercostal spaces. Elevation of the lower and left side of Sternum. displacement of apex beat. slightly upwards and outwards. impulse weak and fluttering. and not always synchronous with pulse at Extremity. Friction sound is quite absent. the heart sound's distant as though it was muffled. especially at apex. but more distinct as we ascend. The respiratory murmur. at the centre of the cardiac region. (upper angle of the fourth Sterno-costal interspace) is feeble and distant.

In the fourth Stage

the above enumerated signs gradually fade away - the sucking of the costal intraspaces disappears - the dull muffled sounds are diminished from above downwards - (if there is no agglutinations of the pleuric surface in front of front of the pericardium -

The fifth and last stage is announced by the absence of the pulsation sounds - the percussion dullness continues to diminish - the action of the heart is vacillating - unsteady & jogging -

The Symptoms by which pericarditis may be recognised are pains in cardiac region - extending to left shoulder and arm

of a burning. tearing. or lancinating character - (sometimes a mere soreness confined within the area of Epigastric region) - tenderness at cardiac orifice with nausea and vomiting - pressure upon intercostal spaces gives distress - palpitation cordis - labored respiration. Easier to orthopnea - pain and oppression increased by lying on left side - dorsal position with head slightly elevated. the most comfortable - disturbed sleep - frightful dreams - jactitation of arms - perspiration of an acid nature - especially if the disease seems as a sequela of rheumatism - or when rheumatism is present -

Sudamina - sometimes appears containing an alkaline substance -

One very common effect and sign of organic disease of the heart. is a sluggish transmission of venous blood. through the abdominal viscera. hence the congestions of various organs - especially the liver. which becomes enlarged and groups tender - the consequence is the biliary secretions and functions are morbidly performed - and oedema of the lower extremities follows. as the legitimate result of obstructed circulation —

Etiology Exposure. undue mental Emotion - violent Effort - but the most frequent cause - is metastasis of rheumatism or gout —

Engaged

Prognosis is generally favorable if it is not complicated with previous disease of the heart—

Therapeutics The remedies usually indicated by the totality of the symptoms manifested through the various stages and modifications of this abnormal deviation are Aco. Ars. Aurum. Bry. Bell. Camm. Carb. v. Colch. Dig. Lach. Spig. Sulph and Veratrum— And the remedies commonly adopted to the different stages are Aco. Ars. Bry. and Bell. in the first or inflammatory stage. Sulp. may sometimes be with good effect— Aco. Ars. Bry. Bell. Camm. Colch. and Lach. are applicable in the

follow

Second Stage - Veratrum and
Carb V. if coldness of the Extrem-
-ities suppurne attended with
obliquation sweats — —
Ars. Aurum. Dig. Lach. and
Camm. in the third Stage (Bell.
may be resorted to in Plethoric
subjects with marked Irritation) —
Ars. Aurum. Camm. Dig. and Lach.
in the Fourth Stage —
Ars. Aurum. Spig. Lach. and.
Iodine, in the Fifth and last
Stage —

Chronic Pericarditis

In this lesion the Symptoms
resemble those of the acute form
differing merely in degree —
Dense adhesions between the
apex and pericardium as apt

to be the result of this variety seriously interrupting the contractile power of the heart. producing sooner or later permanent organic disease. as Hypertrophy etc. The remedies most applicable are the same as those found in the last three stages of the acute form.

Inflamation of the Cardia Carditis. In speaking of this affection I fear I shall be compelled through lack of experience and practical knowledge to follow in the wake of those that have gone before. That it must necessarily from its relative situation be closely allied in outward manifestations

and physical signs to pericarditis) is reasonable. But are there no separate and distinct landmarks to guide us in diagnosing Carditis? Echo answers. no distinguishing feature. Co-existing as it frequently does. must Endo-pericarditis. renders a correct diagnosis difficult. and the exact pathological condition uncertain and obscure. I shall therefore for the want of the necessary means close my remarks upon Carditis by merely observing that it is not clinically known as an idiopathic affection. Consequently a written discription of it cannot be given until "more light" is thrown upon the subject.

and furthermore that in selecting a remedy - the totality of the symptoms - is the all important guide - for a true Hahnemann -

Inflamation of the Endocardium - Endocarditis

Many of the physical signs of endocarditis closely resemble those of pericarditis - and by a superficial observer may be mistaken for it - but a discriminating eye - will at once perceive - that the impulse of the heart - is increased in intensity and is seen and felt to influence the surface of the cardiac region - more extensively - more forcefully and more abruptly - The surface is not* - neither is the precordial

*bulged

present - the apex beat is carried downwards and outwards - the area of dullness - is increased - by means of the increased energy of the heart — bringing it more uniformly forward - and the cavities - being more or less clogged with blood —

Auscultation presents for our consideration various murmurs of a blowing character. but soft and low-toned - these murmurs may arise from aortic obstruction or mitral regurgitation - and as the greatest derangement commonly exists - in the valves of the valves (and from the fact of them being an increased amount of fibrous tissue in that locality) it is reasonable to suppose

that the abnormal sounds - are produced by the obstruction offered to the blood. at the orifices of the aorta and pulmonary arteries. Especially the former as it has long since been discovered - that the left ventricle is more liable to abnormal deviations than the right —. The surfaces of the valves become roughned by the Exudation of lymph (or new fibrin) which interfers with the free action. as well as it does with the moistned Chordae tendonew - or possibly by affecting a non-closure of the orifices - by the irregular contractions of the muscular fibres - hence the systola or regurgatory murmur —

But how are we to know that

these murmurs are ~~not~~ of recent origin and that they are not the effect of prior disease? I answer that a murmur developed at an early period of an acute attack with softness of blowing quality - lowness of pitch - changes of site & rhythm disapearing of such site and rhythm for a short period and then returning favors the recency of origin —

Symptoms - these are comparitively obscure - pain is slight - discomfort and uneasiness at cardiac region is common. more or less palpitation - tenderness of precordial interspace trifling - except there be co-existing pericarditis

all the symptoms however are in proportion to the pre- a obstructed circulation through the heart - In cases when the interruption is serious - either from accumulation of lymph or coagulated fibrin - or from the rupture of a valve. a chorda tendonae - the impulse becomes very irregular in force & rythm and the heart dullness extends itself - to the right of Sternum -

The recumbancy is usually dor- -sal - the attitude quiet (in the simple form) jactitation of arms however sometimes occurs the skin is pale - the joints may. or may not be rheumatic - dyspnoea may or may not be present - in fact all the symptoms. as a -

matter of course) are regulated by the intensity of the attack- and the extent of the obstruction The respiration holds its healthy ratio - to the pulse - unless - the orifices of the aorto and pulmonary arteries - become partially closed - by morbid deposit ——

The pulse in the simple variety (that is) when the intermission is slight) ranges from 80 to 120 - but in the obstructive class of cases - the heart impulse becomes excessively frequent - tumultuous and irregular - with corresponding pulse at extremity - ranging from 130 to 160 at which time - we witness - all the symptoms of a patient rapidly tending to a state of dissolution. viz. Syncope - pulse -

coldness of extremities - great anx-
-iety - with jactitation - orthopnoea
and Eventualy the symptoms of
pulmonary obstruction. livid'ty of
surface. - Prominence of Eyballs -
puffiness of ankles - The brain
also suffers from congestion. fitful
sleep. convulsions. delirium - somnolence
and finally coma Ends the scene -
This is the termination of a sud-
-enly obstructed case of Endocar-
-ditis - But all these symptoms may
Exist in a minor degree. and
the case terminate favorably -
And again it may become one of
complication - involving the lungs
or liver - but the generality of cases
terminate in some Chronic or second-
-ary affection - and which sooner
or later. implicates the muscular

substance of the heart resulting subsequently in hypertrophy with or without dilitation —

Etiology The causes are usually the same as those producing pericarditis - The majority of cases originate as a sequale of rheumatism or pleuritis —

Prognosis — Favorable although secondary consequences are apt to close the scene — It has been said (by good authority) that if valvular murmur remains longer than ten or fourteen days it will very probably exist permanently ever after - nevertheless the evil day may be afar —

Therapeutics The remedies known to be most efficacious in Endocarditis - are (in gmal) Aco. Ars. Asam. Bry. Bell. Bismuth. Agar. Carb.v. Calc.c. Colch. Dig. Lach. Puls. Sulp. Spig. Veratrum. Thuya. an Iodine —

Chronic Endocarditis

Is only known clinically by its effects upon the valves and orifices of the heart - and as there is nothing peculiar characterising it from other affections of the valves. I shall take it in and close this in toto

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characterizing it from other
affections of the valves. I shall
pass it by - and close this imperfect
dissertation - hoping at the same time
that it may receive the approbation
of those - to whom it is respectfully
submitted - But should it prove otherwise
the readers will kindly excuse the

Stop in my bosom - and ~~to~~ listen
the heart for an ansl —